

LABOSTIGMINA HIEROGLYPHICA (OLIVIER) AND ITS
CLOSEST RELATIVES IN EASTERN NORTH AMERICA
(DIPTERA: STRATIOMYIDAE)¹

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ABSTRACT—*Labostigmina stonei*, is described from Kentucky, and the species of the eastern United States most closely related to it and to *L. hieroglyphica* are discussed. *Labostigmina johnsoni* is reduced to subspecific status under *hieroglyphica*.

James and Steyskal (1952) referred seventeen Nearctic species to this genus and presented a key to their identification. James (1970) added an eighteenth species, *atrifacies*, removed as extralimital a previously recorded one, *viridis* (Bellardi), and replaced it by the now valid *snowi* (Hart), previously considered its junior synonym. The present paper describes an additional species and discusses the status of the most closely related forms. Bibliographic references are omitted since they may easily be obtained from the Nearctic Diptera catalog (James, 1965).

Five of the species listed in the catalog, namely, *hieroglyphica* (Olivier), *johnsoni* (Curran), *annamariae* (Brimley), *megantica* (Curran), and *defecta* James, form a closely related complex. I am dedicating the new species of this complex to my long-time friend, one-time associate, and highly respected co-worker in dipterous taxonomy, Dr. Alan Stone.

Labostigmina stonei James, new species

♀. Head mostly greenish yellow. Ocellar triangle, frons below transverse sulcus, and face except narrow ocular orbits black; orbits greenish yellow, in general narrower than in other species of this complex; face just above oral margin usually brownish yellow to yellowish green, color and extent of this area variable; oral margin black except sometimes partly brownish yellow to greenish yellow. Frons above transverse sulcus sometimes wholly greenish yellow but usually marked with black as follows: Median vitta extending from black area of lower frons as much as halfway to anterior ocellus and prominent but isolated crescentic spot extending from each eye margin toward ocellar triangle; sometimes band on vertex extending from ocellar triangle toward and even at times attaining eye margin; in holotype a small anterior extension of ocellar triangle area directed ventrad along median line. Head markings variable but those on

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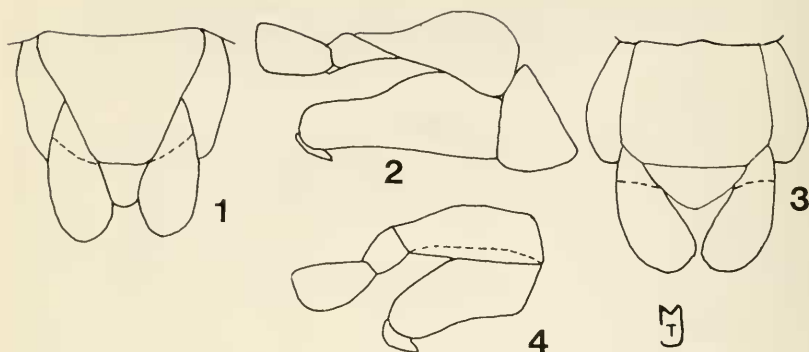


Fig. 1-4, *Labostigmina* spp., male genitalia. 1, *stonei*, dorsal view. 2, same, lateral view. 3, *hieroglyphica johnsoni*, dorsal view. 4, same, lateral view. All hairs omitted.

upper frons much less extensive than in the other species of this complex. Transverse sulcus close to plane of antennal insertion and poorly impressed. Pile of ocellar triangle and frons erect, black on ocellar triangle and most of frons, otherwise pale yellow; that of face and genae appressed to subappressed, pale yellow to yellowish white. Scape and at least base of pedicel yellow, rest of pedicel variable, brownish yellow to brownish black, flagellum brownish yellow to brownish black or reddish black, usually paler at base, becoming almost black toward apex but without a strong transition from the paler to the darker color. Antennal ratio 25:13:65 (width of head by comparison 200). Proboscis black.

Thorax mostly black; postalar callus, supra-alar margins, and scutellum except extreme base greenish yellow; humeri wholly black; broad upper parts of mesopleuron, of sternopleuron, and of pteropleuron greenish yellow. Mesopleuron with abundant but short suberect to erect yellow hairs overlying similarly abundant but short appressed ones; those of scutellum similar but tending toward brown at base; those of pleura appressed to subappressed and longer. Scutellar spines very small. Coxae and femora black, tibiae and tarsi yellow to reddish yellow, tending to brownish toward apices of tibiae and apical tarsomeres. Wing hyaline, strong veins brown. Halter almost black at base, becoming bright green on knob (or sometimes brownish yellow, apparently dependent upon state of preservation).

Abdomen mostly black dorsally; 2nd tergum broadly, 3rd to 5th narrowly, bordered laterally with greenish yellow, this color continuous medially on posterior margins for variable distance on terga 2 to 4 and on entire posterior margin of 5. Sterna greenish yellow with prominent black areas of variable extent, at maximum including most of 1, 2, 3, and 5, at minimum limited to lateral spots on 3 and 4 and a transverse band on 5. Pile of terga yellow and appressed to subappressed laterally, mostly short, erect and black on disc, pale and black hairs overlapping to an extent; pile of venter pale yellow.

Length, 9.2-10.5 mm, of holotype 10.0.

♂. Head wholly black. Pile of head much longer than in female, yellow to bright yellow. Thorax wholly black except scutellar spines which are brownish

yellow; pile long and bright yellow, erect mesonotal hairs about as long as combined scape and pedicel. Markings of terga more prominent than in the female, those of 3 and 4 broadly triangular; hairs black and yellow as in female but longer, sterna wholly yellow with yellow hairs. Genitalia mostly dark brown to brownish black; last tergum (fig. 1) a truncated triangle; basistyle (fig. 2) stouter and more strongly sclerotized than in other members of this complex, in lateral view humped anteriorly, mostly black but becoming reddish yellow toward apex. Length, 9.5–11.0 mm.

Holotype ♀, Evan Mill, Lexington, KY, 24-V-1945, L. H. Townsend; Washington State University type no. 355.

Paratypes: 2 ♀, same data; 6 ♀, Lexington, KY, 19-V-1951, 2-V-1952, 6-V-1954, 5-V-1957, Townsend; 1 ♂, same, 15-V-1954; 2 ♀, same but collector not given, 12-V-1957 and 29-V-1927 (1957?); 1 ♂, Garrett, KY, 1-V-1957; 1 ♀, Jessamine Co., KY, 12-V-1954; 1 ♀, Woodford Co., KY, 1-VI-1943, Ritcher & Townsend; 1 ♀, Paris, KY, 31-V-1963; 1 ♀, Stanford, KY, 10-5-1963.

In my key (James and Steyskal, 1952) females trace to *annamariae* or, if the darkening of the venter is slight, as in one paratype, possibly to *johnsoni*; the males available to me trace to *johnsoni*. The narrow lateral yellow margin of the second tergum will readily distinguish the females from *annamariae* and the black humerus, the partly blackened venter, and the more extensive black area of the face will separate them from *johnsoni*. The male genitalia (fig. 1, 2) differ from those of other members of this complex in being more strongly sclerotized, in having the basistyle stouter and more strongly developed and more convex basally, and in the truncated triangular, rather than subquadrate, last tergum.

Labostigmina micheneri James, based on a single male, is similar and, like *L. stonei*, has extensive black abdominal pile. In that species, however, the scape is shorter in relation to the pedicel (ratio, 1.25:1) and the flagellum is black on the last two flagellomeres in strong contrast to the pale color of the basal ones.

Labostigmina hieroglyphica hieroglyphica (Olivier)

Distribution: Atlantic states, Maine to Florida but particularly southern, extending westward at least to Arkansas and Louisiana.

Labostigmina hieroglyphica johnsoni (Curran), NEW STATUS

The best interpretation of this form, in the light of our present knowledge, is as an essentially western subspecies of *hieroglyphica*. It is distinguishable from the typical form by its largely yellow antenna, including the entire scape, pedicel, and at least base of flagellum; in contrast the antenna of *hieroglyphica* is wholly black, the scape and pedicel being glossy. The male genitalia (fig. 3, 4) of the

two subspecies appear identical. Contrary to my previous statement (James and Steyskal, 1952:411) some intergradation does occur. The distributional pattern, though essentially that of a subspecific form of *hieroglyphica*, is somewhat puzzling, indicating that possibly hybridization may occur. A male, Hope, Arkansas, 22-IV-1965, H. R. Dodge, bears the same data as two females that pass for typical *hieroglyphica*, and I have males and females of both forms from Kenesaw Mt., Georgia. Yet typical *hieroglyphica* strongly predominates over a much wider area east of the Mississippi, whereas the reverse is true west of that river. Distribution of *johnsoni*: Texas to Kansas, Tennessee, and Louisiana, scantily represented eastward to Georgia and the District of Columbia.

REFERENCES

- James, M. T. 1965. Stratiomyidae, in Stone, A., C. W. Sabrosky, W. W. Wirth, R. H. Foote, and J. R. Coulson. A catalog of the Diptera of America north of Mexico. USDA Agric. Handbook No. 276, 1696 p. (299-319).
- . 1970. A new species, correction of synonymy, and new records of Nearctic Stratiomyidae (Diptera). Proc. Entomol. Soc. Wash. 72:327-332.
- and G. C. Steyskal. 1952. A review of the Nearctic Stratiomyini (Diptera, Stratiomyidae). Ann. Entomol. Soc. Amer. 45:385-412.